ment of this new method of treatment. Kolpo-uretero-cystotomy should be done early. By the operation, and the subsequent treatment, the associated lesions of the bladder will be cured, and in many cases all the urinary organs restored to a normal condition. In other cases, by the accurate means of diagnosis afforded by the opening in the bladder, allowing the use of the catheter and renal sound, a stone in the pelvis of the kidney too large to pass through the ureter, extensive suppuration of the kidney itself, or some other condition not susceptible of cure by this method of treatment, may be discovered. Nephrotomy or nephrectomy may then be resorted to with greater confidence, and an increased probability of success. The patient is meanwhile relieved from the distress resulting from the complicating cystitis and pyelitis. The vesical and pelvic irritability and tenesmus no longer causing loss of sleep, her general condition can be improved, and she is better prepared to undergo a serious operation.

4. Intravaginal drainage prevents the evil consequences of incontinence of urine, and perfects the method by removing the chief objection to its employment.

POTT'S FRACTURE.

A COMPARATIVE STUDY.

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Probably no fracture of the bones of the lower limb is so common as that which goes by the name of Pott's fracture, excepting, perhaps, fracture of the neck of the femur. The essential features of a Pott's fracture are the following: The fibula is broken about three inches above the ankle, the tibial malleolus is splintered off, or the deltoid ligament ruptured, and the foot everted. The most frequent cause of this very common accident is a sudden and violent twist of the foot.

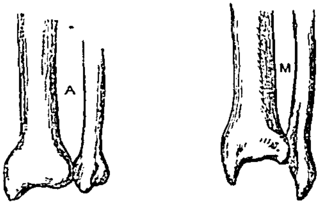
It is the object of this paper to show that other causes than those of civilization are responsible for this remarkable predisposition of the fibula to break at this spot.

If man's malleoli be compared with those of other mammals, we shall find that he differs from them in the fact that his external, or fibular malleolus, descends much below the internal or tibial malleolus. Even in those mammals which so closely approach him in anatomical characters, the anthromorpha (Gibbon, orang, gorilla, and chimpanzee), the tibial and fibular malleoli descend to the same level. As far as I know, the malleoli of no other mammal approach even this condition, the rule is for the tibial malleolus to be the lower. In the accompanying sketch the distal ends of the tibia and fibula of a man and a chimpanzee are introduced for comparison. (Fig. 1.)

In the *Morphologische Jahrbuch* (August, 1886) Gegenbauer published the following interesting observations:

In the human fœtus during the fifth month of intrauterine life, the tibial is more prominent than the fibular malleolus. In the seventh month the two are of equal length; from this date onward the fibular exceeds the tibial malleolus. Thus the primitive condition agrees with that in apes, where the fibular never exceeds the tibial malleolus. In man the preponderance of the fibular malleolus gives greater firmness to the ankle-joint, and has probably been acquired with the assumption of the erect posture.

FIG. 1.



A. The malleoli of a chimpanzee. M. The distal end of the tibia and fibula of man.

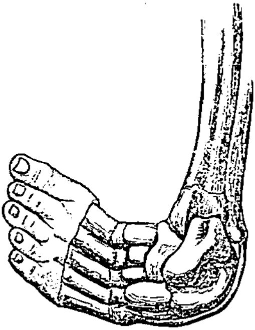
As far as I am aware, no one has ever described an example of Pott's fracture in a monkey, or, indeed, in any mammal save man. Fractures of other bones, and of the fibula and tibia, have come under my notice many times in quadrumana, but I have never yet seen anything in them resembling a Pott's. Hence we may assume that Pott's fracture is peculiar to the human kind, and occurs as a direct result of the extraordinary length of the fibular malleolus, in that it affords excessive leverage when the foot is suddenly and violently twisted laterally; the force applied to the distal end causing the fibula to snap at some point in its lower fourth.

This inquiry when pushed further leads to other facts of interest. Parker and Shattuck, in their invaluable research on talipes equino-varus (*Path. Trans.*, vol. xxxv.), have described the agreement which exists in the obliquity of the neck of the astragalus and the extension of the inner facet of that bone on to the neck in the anthropomorpha (especially the orang), in the human fœtus at birth, and in the astragalus from cases of talipes equino-varus. In the orang the foot is naturally in the position of varus. This is true of the fœtus during a portion of its intrauterine existence. If, from any cause, the foot persists in this position, varus is the result. Hence talipes equino-varus is to be regarded as a persistent fœtal condition when congenital.

As further evidence in support of this view the following fact is of value:

In congenital talipes equino-varus not only the astragalus retains its fœtal and simian type, but the malleoli also, for on examining several specimens of this deformity, the tibial and fibular malleoli were found to be on the same level. In Fig. 2, taken from a dissection, this relation of the parts is well shown.

FIG. 2.



The foot and ankle-joint of a human fœtus with congenital talipes equino-varus. It is intended to show that the malleoli are of equal length in this deformity

From an evolutionist's point of view these facts are extremely interesting and very suggestive, for, during development the malleoli of man in their relation to the astragalus, and in length, present temporarily relations and configurations which are permanent features in mammals closely allied to him; but in the greater length of the adult fibular malleolus we have a condition absolutely human, and possibly one of the direct results of the assumption of the erect posture. I say positively, for this reason, it is quite as probable that an elongation of the fibular malleolus may have played a part in *enabling* man to assume and maintain an erect position. Should any person doubt the advantage of this elongation of the outer malleolus in fixing the tarsus firmly whilst standing, and especially in walking, he need only study the ungainly *wobbling* gait of an orang on its hind limbs, to have all doubts immediately set at rest.

It is also equally certain that whatever advantage is gained by this extra length of the fibular malleolus, it is accompanied by the great inconvenience of predisposing man to the occasional occurrence of Pott's fracture.